

-continued

(2) INFORMATION FOR SEQ ID NO: 3:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 24 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

GGTATATCCA GTGATCTTCT TCTC

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(2) INFORMATION FOR SEQ ID NO: 4:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 24 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

GGTATATCCA GTGATCTTCT TCTC

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(2) INFORMATION FOR SEQ ID NO: 5:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 21 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

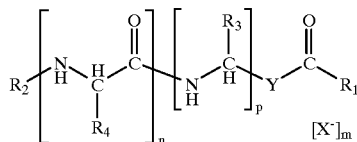
(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

GGUAUAUCCA GUGAUCUUCU T

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We claim:

1. A lipid having the structure:



or a salt, or solvate, or enantiomer thereof wherein; (a) Y is a direct link or an alkylene of 1 to about 20 carbon atoms; (b) R₁ is H; (c) R₂, R₃ and R₄ are positively charged moieties, or at least one but not all of R₂, R₃ or R₄ is a positive moiety and the remaining are independently selected from H, and alkyl moiety of 1 to about 6 carbon atoms, or a heterocyclic moiety of about 5 to about 10 carbon atoms; (d) n and p are independently selected integers from 0 to 8, such that the sum of n and p is from 1 to 16; (e) X⁻ is an anion or polyanion and (f) m is an integer from 0 to a number equivalent to the positive charge(s) present on the lipid; provided that if Y is a direct link and the sum of n and p is 1 then one of either R₃ or R₄ must have an alkyl moiety of at least 10 carbon atoms.

2. A lipid according to claim 1 wherein at least one but not all of R₂, R₃, and R₄ are independently selected from the group consisting of a substituted heterocyclic moiety of 1 to about 6 carbon atoms, or a substituted alkyl moiety of 1 to about 6 carbon atoms substituted with substituents selected from the group consisting of OH, thio, aryl of 1 to about 20 carbon atoms, and OR₇, wherein R₇ is an alkyl moiety of 1

to about 24 carbon atoms, an alkenyl of 2 to about 24 carbon atoms, an aryl of about 5 to about 20 carbon atoms or an aralkyl of about 6 to about 25 carbon atoms.

3. A lipid according to claim 1 wherein at least one but not all R₂, R₃, and R₄ are independently selected from a group consisting of an alkylamine moiety, a fluoroalkylamine moiety, or a perfluoroalkylamine moiety of 1 to about 6 carbon atoms, an arylamine moiety or an aralkylamine moiety of 5 to about 10 carbon atoms, a guanidinium moiety, an enamine moiety, a cyclic amine moiety, an amidine moiety, an isothiourea moiety, a heterocyclic amine moiety, and a substituted heterocyclic moiety and a substituted alkyl moiety of 1 to about 6 carbon atoms substituted with a substituent selected from the group consisting of NH₂, C(=O)NHR₇, C(=O)NHR₇, NHR₇R₈, and C(=O)NHR₇R₈, wherein R₇ and R₈ are independently selected from an alkyl moiety of 1 to about 24 carbon atoms, an alkenyl moiety of 2 to about 24 carbon atoms, an aryl moiety of about 5 to about 20 carbon atoms, and an aralkyl moiety of about 6 to about 25 carbon atoms.

4. A lipid according to claim 3 wherein the arylamine moiety is selected from the group consisting of tryptophane, phenylalanine, and tyrosine.

5. A lipid according to claim 1 wherein R₂ is an amino acid residue having a positively charged side chain, and wherein the amino group(s) is optionally substituted with an alkyl of 1 to about 6 carbon atoms or wherein the amino group(s) is substituted to form a secondary, tertiary, or quaternary amine with an alkyl moiety of 1 to about 6 carbon atoms optionally substituted with a group selected from; hydroxyl, amino, alkoxy of 1 to about 6 carbon atoms,